

the application in better form for appeal should an appeal be necessary. The amendments are necessary and were not earlier presented because new references are applied in the outstanding Office Action. Entry of the amendments is thus respectfully requested.

Applicants appreciate the courtesies extended to Applicants' representative during the personal interview conducted on April 7, 2003. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

Claim 21 is rejected under 35 U.S.C. §112, second paragraph, and provisionally rejected under the judicially created doctrine of obviousness-type double patenting and provisionally rejected under 35 U.S.C. §103(a) over co-Pending application No. 09/985,826. As claim 21 is cancelled, the rejections are moot.

Claims 1, 2, 4-9, 11-17 and 19-25 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent 6,144,136 to Umeda et al. (Umeda) in view of U.S. Patent 5,949,166 to Ooiwa et al. (Ooiwa), U.S. Patent 5,977,669 to Yoshida et al. (Yoshida) and JP-404026346A to Hideyuki. As claims 1, 2, 4-7, 9, 11-16, 20 and 21 are cancelled the rejection of those claims is moot. Applicant respectfully traverses the rejection of claims 8, 17, 19 and 22-25.

As discussed during the interview, Applicant asserts that none of the applied references, whether considered alone or in combination, disclose or suggest an AC generator for a vehicle, comprising: a rotor having a shaft, a stator having a pair of three-phase stator windings; each of which has three phase-windings and three output lead-wires respectively extended from said stator windings; a frame for supporting said rotor and said stator, said frame having three lead-wire holes spaced apart from each other in the circumferential direction of said frame; and a rectifier unit disposed outside said frame, said rectifier unit having a plurality of diodes and a plurality of input terminals respectively connected to said output lead-wires, each of said input terminals including a columnar terminal member for holding two of said out lead-wires each of which is connected to different one of said diodes;

wherein said columnar member is disposed in each of said lead-wire holes, and wherein first one of said columnar terminal members holds two of said output lead-wires extended from said first stator winding, second one of said columnar terminal members holds two of said output lead wires extended from said second stator winding and the remainder of said columnar terminal members holds two of said output lead-wires respectively extended from said first and second stator windings.

Umeda discloses a stator arrangement of an alternator for a vehicle having a sufficient number of conductor members in each of the slots using few specific segments. The stator winding has a plurality of large U-shaped conductor segments and small U-shaped conductor segments connected with one another to form a first coil-end group disposed on one axial end of the stator core so that the small U-shaped conductor segments are surrounded by the large U-shaped conductor segments. However, Umeda does not disclose or suggest a frame having three lead-wire holes or a rectifier having a columnar terminal member.

Furthermore, the problem being addressed in the instant application is an improved lead-wire arrangement of an AC generator and suppressing fan noise in the generator inexpensively. In contrast, the problem being addressed in Umeda is difficulties and high production costs in manufacturing a stator due to a large number of conductor joint segments. Thus, there is no suggestion in Umeda to combine the references as done in the Office Action.

Ooiwa discloses a rectifier capable of improving cooling performance. However, Ooiwa does not disclose a frame having three lead-wire holes or a rectifier having a columnar terminal member. Rather, Ooiwa discloses lead-wires from positive and negative diodes connected to small and large fins. The lead-wires do not pass through the frame but only connect the small fin 501 and large fin 503 located at the same side of the frame 3B.

Additionally, Ooiwa is addressing the improvement of cooling performance by effectively introducing the cooling air to the rectifying elements on the cooling fins. The

problem being addressed in the instant application is an improved lead-wire arrangement of an AC generator and suppressing fan noise in the generator inexpensively. Thus, there is no suggestion in Ooiwa to combine the reference as done in the Office Action.

Yoshida discloses, for the purposes of reducing breakage within a rectifier, a terminal 58 designed as terminal connections with holes. However, the Office Action admits that none of Umeda, Ooiwa, or Yoshida disclose input terminals including a columnar member as recited in the rejected claims. In an attempt to overcome the admitted deficiency, the Office Action combines Hideyuki and alleges that it would have been obvious to one of ordinary skill in the art to design an AC generator as disclosed by Umeda using the lead connections disclosed by Ooiwa, the terminal holes as disclosed by Yoshida, and a columnar member as disclosed by Hideyuki.

As discussed during the interview, although Hideyuki may disclose a columnar terminal member 22 for holding two output lead-wires, Hideyuki does not disclose or suggest a columnar terminal member wherein first one of the columnar terminal members holds two of the output lead-wires extended from the first stator winding, the second one of the columnar terminal members holds two of the output lead-wires extended from the second stator winding and the remainder of the columnar terminal members holds two of the output lead-wires respectively extended from the first and second stator windings.

Rather, Hideyuki discloses a connection terminal unit 22 fixed to an insulation member 15 to extend radially outward from the insulation member 15' (see first 3 lines of lower right column on page 235 and Figs 1-4 of Hideyuki). Additionally, Hideyuki merely discloses two columnar members that two output lead wires extended from the same stator winding. Accordingly, the combination of Umeda, Ooiwa, Yoshida and Hideyuki does not disclose or suggest each and every feature recited in the rejected claims.

Regarding claim 19, none of the applied references whether considered alone or in combination disclose the DC generator wherein the columnar terminal member has a pair of

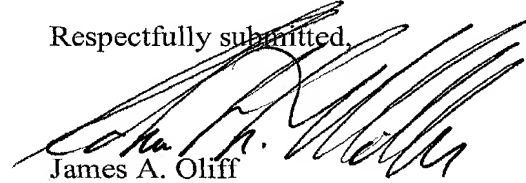
passages for supporting two of the output lead-wires, each of the passages opening toward a respective lead-wire hole for allowing ease of insertion of each lead-wire into a respective one of the passages.

Thus, Applicant respectfully requests the rejection of claims 8, 17, 19 and 22-25 under 35 U.S.C. §103(a) be withdrawn.

In view of the foregoing amendments and remarks, Applicant submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 8, 17, 19 and 22-25 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,



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Attachment:
Appendix

Date: April 8, 2003

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<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
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APPENDIX

Changes to Claims:

Claims 1, 2, 4-7, 9-16, 18, 20 and 21 are canceled.

The following is a marked-up version of the amended claims:

8. ~~(Twice~~ (Amended) The ac generator as claimed in claim 4~~22~~, wherein
_____said stator winding comprises a first star-connected three-phase winding and a
second star-connected three-phase winding.

17. ~~(Twice~~ Thrice Amended) An ac generator according to claim 1~~22~~, wherein
each of said ~~plurality of~~ input terminals is positioned at an outer periphery of said rectifier
unit.

19. ~~(Twice~~ Thrice Amended) An ac generator according to claim 3~~22~~, wherein
each of said columnar terminal members has a pair of passages for supporting ~~each of said at-~~
~~least two wires~~ two of said output lead wires, each of said passages opening toward a
respective lead wire hole for allowing ease of insertion of each lead wire into a respective one
of said passages.

22. ~~(Twice~~ (Amended) An ac generator for a vehicle, comprising:
a rotor having a shaft;
a stator having ~~a pair of~~ first and second three-phase stator windings, each of
which has three phase-windings and three output lead wires respectively extended from said
stator windings;
a frame for supporting said rotor and said stator, said frame having three lead-
wire-holes spaced apart from each other in the circumferential direction of said frame; and
a rectifier unit disposed outside said frame, said rectifier unit having a
plurality of diodes and a plurality of input terminals respectively connected to said output

lead wires, each of said input terminals including a columnar terminal member for holding two of said ~~out~~ output lead wires each of which is connected to different one of said diodes;

wherein said columnar member is disposed in each of said lead-wire holes;

and

wherein first one of said columnar terminal members ~~of two of said three input terminals~~ holds two of said output lead wires extended from ~~the same~~ said first stator winding, second one of said columnar terminal members holds two of said output lead wires extended from said second stator winding and the remainder of said ~~input terminals~~ columnar terminal members holds two of said output lead wires respectively extended from ~~different~~ first and second stator windings.